

### **REMARKS/ARGUMENTS**

This paper is submitted in response to the Office Action mailed 14 June 2005. At that time, claims 1-78 were pending in the Application and the Applicants had elected Group I (including claims 1-41, 45-51, 53-59, 61-67, 69-75 and 77) for prosecution on the merits. In the 14 June 2005 Office Action, the Examiner allowed claims 41 and 77 and indicated that claims 12-20, 32-40, 54-59, 62-67 and 70-75 contained allowable subject matter. At the same time, the Examiner rejected claims 1-8 and 45-49 under 35 U.S.C. § 102(a) as being anticipated by European patent publication No. EP 0 949 988 A1 (Tanaka et al.) and rejected claims 9, 10, 21-30, 50 and 51 under 35 U.S.C. § 103(a) as being obvious in view of Tanaka et al. Claims 11, 31, 53, 61 and 69 were also rejected under 35 U.S.C. § 103(a) as being obvious in view of U.S. patent No. 6,821,556 (Ishida et al.).

By this paper, the Applicants have made a minor clarifying amendment to the description, have cancelled the non-elected claims 42-44, 52, 60, 68, 76 and 78 and previously pending claims 3, 11, 13, 23, 33 and 61 and have amended claims 1, 4, 12, 14, 21, 24, 31, 32, 34, 36, 37, 45, 53, 54, 62, 63, 69, 70 and 71. As a result of this paper, the pending claims include claims 1, 2, 4-10, 12, 14-22, 24-32, 34-41, 45-51, 53-59, 62-67, 69-75 and 77.

In light of these amendments and the following remarks, reconsideration and allowance of the pending claims is respectfully requested.

#### **Amendments to the Description**

The Applicants have made a minor clarifying amendment to the Description. The Applicants submit that this amendment is completely supported by the application as originally filed and adds no new matter.

#### **Allowable Subject Matter – Claims 12, 14-20, 32, 34-41, 54-59, 62-67, 70-75 and 77**

Claims 41 and 77 are allowed.

The Examiner has indicated (at page 8 of the Office Action) that claims 12-20, 32-40, 54-59, 62-67 and 70-75 would be allowable if rewritten in independent form to recite all of the features of their respective base claims and any intervening claims. Claims 13 and 33 have been

cancelled by this paper. The Applicants have placed claims 12, 14-20, 32, 34-40, 54-59, 62-67 and 70-75 in condition for allowance by amending:

- claim 12 to recite the features claim 11 (claims 14-20 depend from claim 12);
- claim 32 to recite the features of claim 31 (claims 34-40 depend from claim 32);
- claim 54 to recite the features of claim 53 (claims 55-59 depend from claim 54);
- claim 62 to recite the features of claim 61 (claims 63-67 depend from claim 62);  
and
- claim 70 to recite the features of claim 69 (claims 71-75 depend from claim 70).

These amendments are submitted to place claims 12, 14-20, 32, 34-40, 54-59, 62-67 and 70-75 in condition for allowance.

Claims 12 and 32 have been further amended to respectively incorporate the features of previously pending claims 13 and 33 (i.e. “the radiation-sensitive medium is ineluable in aqueous media when coated and dried”). Claims 12 and 54 have been further amended to clarify that the bonding monomer is “chemically bonded to the hydrophilic polymer and to the hydrophobic monomer.” The Applicants submits that these additional amendments to claims 12, 32 and 54 do not alter the patentability of these claims.

The Applicants have also made minor clarifying amendments to dependent claims 14, 34, 36, 37, 63 and 71 which are submitted not to alter the patentability of these claims.

Rejections Based on Tanaka et al. – Claims 1, 2, 4-10, 21, 22, 24-30 and 45-51

At pages 2-4 of the Office Action, the Examiner has raised Tanaka et al. under 35 U.S.C. § 102(b) in connection with previously pending claims 1-8 and, at pages 4-5 of the Office Action, the Examiner has raised Tanaka et al. under 35 U.S.C. § 103(a) in connection with claims 9 and 10. Claim 3 has been cancelled by this paper. The Applicants submit that claims 1, 2 and 4-10 (as amended) patentably distinguish Tanaka et al.

As understood by the Applicants, Tanaka et al. disclose (at paragraph [0013]) a lithoprinting plate comprising a support and a hydrophilic recording layer. The hydrophilic recording layer comprises “fine particles” (convertible to image area by heat) and a hydrophilic binder polymer containing a polyvalent metal ion and having a Lewis base portion containing

nitrogen, oxygen or sulfur. The hydrophilic binder polymer may be three-dimensionally cross-linked by the interaction between the polyvalent metal ion and the Lewis base portion.

Paragraph [0060] of Tanaka et al. describes fine particles that are oleophilic monomers dispersed in the hydrophilic layer. The fine particles may be in the form of microencapsulated internal oleophilic components separated from the hydrophilic layer by a hydrophilic wall. Paragraphs [0064] and [0081] of Tanaka et al. describe that when thermally exposed, the oleophilic components of the fine particles react with the hydrophilic binder polymer in the hydrophilic recording layer and that, in addition to the hydrophilic binder polymer, a reactive material can be “used” or “added” to heighten the degree of cross-linking of the oleophilic component.

Claim 1 (as amended) recites a “radiation-sensitive medium comprising a plurality of hydrophilic polymer particles, wherein each of the hydrophilic polymer particles comprises: at least one thermally softenable hydrophobic polymer, at least one hydrophilic polymer and at least one bonding agent chemically bonded to the hydrophobic polymer and to the hydrophilic polymer”. Tanaka et al. do not teach or suggest this combination of features. More specifically, Tanaka et al. fail to teach or suggest a single particle containing: (i) a hydrophobic polymer; (ii) a hydrophilic polymer; and (iii) a bonding compound having the features recited in claim 1. Neither the hydrophilic binder polymer nor the fine particles described by Tanaka et al. contain a single particle having the features recited in claim 1. Tanaka et al. do not describe how the reactive material discussed in paragraph [0081] is “used” in or “added” to the recording layer. More particularly, Tanaka et al. fail to teach or suggest that addition or use of “reactive material” in the recording layer creates a single particle having the claim 1 features.

Based on this reasoning, the Applicants submit that claim 1 patentably distinguishes Tanaka et al. Claims 2 and 4-10 depend from claim 1 and are submitted to be allowable for at least this reason.

At pages 2-4 of the Office Action, the Examiner has raised Tanaka et al. under 35 U.S.C. § 102(b) in connection with previously pending claims 45-49 and, at pages 4-5 of the Office Action, the Examiner has raised Tanaka et al. under 35 U.S.C. § 103(a) in connection with claims 50 and 51. The Applicants submit that claims 45-51 patentably distinguish Tanaka et al.

Like claim 1, claim 45 (as amended) recites a “radiation-sensitive medium comprising: ... a plurality of hydrophilic polymer particles, each of the hydrophilic polymer particles comprising: at least one thermally softenable hydrophobic polymer, at least one hydrophilic polymer and at least one bonding agent chemically bonded to the hydrophobic polymer and to the hydrophilic polymer.” As discussed above in relation to claim 1, Tanaka et al. fail to teach or suggest a single particle containing: (i) a hydrophobic polymer; (ii) a hydrophilic polymer; and (iii) a bonding agent having the features recited in claim 45.

Accordingly, the Applicants submit that claim 45 patentably distinguishes Tanaka et al. Claims 46-51 depend from claim 45 and are submitted to be allowable for at least this reason.

At pages 5-6 of the Office Action, the Examiner has raised Tanaka et al. under 35 U.S.C. § 103(a) in connection with previously pending claims 21-30. Claim 23 has been cancelled by this paper. The Applicants submit that claims 21, 22 and 24-30 patentably distinguish Tanaka et al.

Claim 21 (as amended) recites a “radiation-sensitive medium comprising at least one copolymer, the copolymer comprising: a hydrophilic polymer, a hydrophobic monomer and a monomer that has a carboxylic group.” Tanaka et al. fail to teach or suggest this claim 21 feature. More particularly, Tanaka et al. fail to teach or suggest the claim 21 feature of a single copolymer comprising: (i) a hydrophilic polymer; (ii) a hydrophobic monomer; and (iii) a monomer that has a carboxylic group. The Applicants submit that it would not be obvious to modify the hydrophilic recording layer or the fine particles disclosed by Tanaka et al. to provide a single copolymer having the claim 21 features.

Based on this reasoning, the Applicant submits that claim 21 patentably distinguishes Tanaka et al. Claims 22 and 24-30 depend from claim 21 and are submitted to be patentable for at least this reason.

#### Rejections Based on Ishida et al – Claims 31, 53 and 69

At pages 7-8 of the Office Action, the Examiner has raised Ishida et al. under 35 U.S.C. § 103(a) in connection with previously pending claims 11, 31, 53, 61 and 69. Previously pending

claims 11 and 61 have been cancelled by this paper. The Applicants submit that claims 31, 53 and 69 patentably distinguish Ishida et al.

As understood by the Applicants, Ishida et al. disclose (at col. 2, lines 47-57) a process for producing a heat-sensitive recording material comprising (i) a support, (ii) a heat-sensitive recording layer comprising a leuco dye and a developer, (iii) an interlayer comprising a film-forming resin and formed on the heat-sensitive recording layer, and (iv) a protective layer comprising a resin in the form of a film and formed on the interlayer, wherein the protective layer has a gloss (based on JIS P 8142) of not less than 80%. Ishida et al. also disclose (at col. 9, lines 5-20) that examples of film-forming resins which may be contained in the interlayer include at least one member selected from the group consisting of: water-soluble resins and water-dispersible resins, such as fully saponified polyvinyl alcohol, partially saponified polyvinyl alcohol, carboxy-modified polyvinyl alcohols, acetoacetyl-modified polyvinyl alcohols, silicon-modified polyvinyl alcohols, diacetone-modified polyvinyl alcohols and like polyvinyl alcohols, as well as starches, hydroxyethyl cellulose, methyl cellulose, carboxymethyl cellulose, gelatin, casein, gum arabic, diisobutylene-maleic anhydride copolymer salts, styrene-maleic anhydride copolymer salts, ethylene-acrylic acid copolymer salts, styrene-acrylic acid copolymer salts, acrylic latex, and urethane latex. Ishida et al. also state that the interlayer may comprise two or more of these example film-forming resins.

Claim 31 (as amended) recites “radiation-sensitive medium comprising hydrophilic polymer particles, ... each of the hydrophilic polymer particles comprising a hydrophilic polymer and at least one copolymer of a hydrophobic monomer and a monomer that has a carboxylic group.” The Examiner expresses the view that Ishida et al. suggests that an interlayer may comprise a combination of two or more film-forming resins and that such film-forming resins may include a polyvinyl alcohol (allegedly a hydrophilic polymer) and a styrene-acrylic acid copolymer (allegedly a copolymer having the features recited in claim 31). However, the combinations of film forming resins disclosed by Ishida et al. are not described as being combined in the same particle. Accordingly, Ishida et al. fail to teach or suggest the claim 31 feature of a radiation sensitive media comprising hydrophilic polymer particles wherein each of the hydrophilic polymer particles comprises a hydrophilic polymer and a copolymer having the

features recited in claim 31. Based on this reasoning, the Applicants submit that claim 31 patentably distinguishes Ishida et al.

Similarly, claim 69 (as amended) recites a “coating of a radiation-sensitive medium on the substrate, the radiation-sensitive medium comprising hydrophilic polymer particles, ... each of the hydrophilic polymer particles comprising a hydrophilic polymer and at least one copolymer of a hydrophobic monomer and a monomer that has a carboxylic group.” The combinations of film forming resins disclosed by Ishida et al. are not described as being combined in the same particle. Accordingly, Ishida et al. fail to teach or suggest that each of the hydrophilic polymer particles comprises a hydrophilic polymer and a copolymer having the features recited in claim 69. Based on this reasoning, the Applicants submit that claim 69 patentably distinguishes Ishida et al.

Claim 53 recites a “radiation sensitive media comprising: ... a substance capable of converting radiation into heat.” Ishida et al. fail to teach or suggest such a feature. At page 8 of the Office Action, the Examiner expresses the view that the zinc oxide and titanium dioxide disclosed by Ishida et al. at col. 6, lines 44-50 are light-to-heat conversion materials. While zinc oxide and titanium dioxide may be photocatalysts, the Applicants respectfully submit that zinc oxide and titanium dioxide are not, by themselves, light-to heat conversion materials. In contrast, zinc oxide and titanium dioxide are highly reflective (i.e. have a brilliant white color). While zinc oxide and titanium dioxide may absorb some ultraviolet radiation, such absorption merely changes the surface behavior of the zinc oxide and titanium dioxide and does not create any significant heat. Based on this reasoning, the Applicants submit that claim 53 patentably distinguishes Ishida et al.

### Conclusions

The Applicants respectfully assert that, based upon the foregoing, the pending claims 1, 2, 4-10, 12, 14-22, 24-32, 34-41, 45-51, 53-59, 62-67, 69-75 and 77 are patentably distinct from the cited references and request that a timely Notice of Allowance be issued in this case. If there are any remaining issues preventing allowance of the pending claims that may be clarified by telephone, the Examiner is requested to call the undersigned.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "E. R. Witt", written over a horizontal line.

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